

CLAIMS

1. A process for manufacturing an electret article, comprising passing melt-extruded thermoplastic resin fibers through a mist space substantially formed from droplets of a polar liquid, and then collecting the fibers, wherein said thermoplastic resin fibers contain electrical-chargeability enhancing agents, and the average diameter of said droplets is less than 20 μm .

2. The process according to claim 1, wherein the thermoplastic resin fibers are not subjected to a drying step after passing through said mist space.

3. The process according to claim 1 or 2, wherein a resin-droplet percentage of the formula:

$$(W_p/W_f) \times 100$$

wherein W_p denotes the amount of said droplets forming said mist space and sprayed to a unit volume thereof within a certain period of time, and W_f denotes the amount of said melt-extruded thermoplastic resin passed through said mist space within a certain period of time is 500 or more.

4. The process according to any one of claims 1 to 3, wherein a heated gas is blown onto said melt-extruded thermoplastic resin fibers.

5. The process according to any one of claims 1 to 4, wherein a volume specific resistivity of said thermoplastic resin is $10^{14} \Omega \cdot \text{cm}$ or higher.

6. The process according to claim 5, wherein a volume specific resistivity of said thermoplastic resin is $10^{16} \Omega \cdot \text{cm}$ or higher.

7. The process according to any one of claims 1 to 6, wherein said polar liquid is water.

8. The process according to any one of claims 1 to 7, wherein said electrical-chargeability enhancing agent is at

least one compound selected from a group consisting of a hindered amine compound, a metallic salt of a fatty acid, a metallic oxide, and an unsaturated carboxylic acid-modified high-molecular compound.

9. The process according to any one of claims 1 to 8, wherein the average diameter of said droplets is 15 μm or less.

10. An apparatus for manufacturing an electric article, comprising (1) a means for melt-extruding a thermoplastic resin containing electrical-chargeability enhancing agents to form thermoplastic resin fibers; (2) a means for spraying droplets consisting essentially of a polar liquid to a space downstream of a direction of said thermoplastic resin extruded from said means for melt-extruding a thermoplastic resin, to thereby form a mist space, the average diameter of said droplets being less than 20 μm ; and (3) a means for collecting said thermoplastic resin fibers which have been passed through said mist space.